

Wednesday, March 25, 2009
SMALL BODIES: SHAPES OF THINGS TO COME
 8:30 a.m. Waterway Ballroom 6

Chairs: Al Conrad
 Debra Buczkowski

- 8:30 a.m. Conrad A. R. * Merline W. J. Drummond J. D. Carry B. Dumas C. Campbell R. D. Goodrich R. W. Chapman C. R. Tamblyn P. M.
[Recent Results from Imaging Asteroids with Adaptive Optics](#) [#2414]
 We report results from recent high-angular-resolution observations of asteroids using adaptive optics (AO) on large telescopes.
- 8:45 a.m. Marchis F. * Descamps P. Durech J. Emery J. P. Harris A. W. Kaasalainen M. Berthier J.
[The Cybele Binary Asteroid 121 Hermione Revisited](#) [#1336]
 The combination of adaptive optics, photometric and Spitzer mid-IR observations of the 121 Hermione binary asteroid system allowed us to confirm the bilobated nature of the primary derived a bulk density of 1.4 g/cc implying a rubble-pile interior.
- 9:00 a.m. Schmidt B. E. * Thomas P. C. Bauer J. M. Li J. -Y. Radcliffe S. C. McFadden L. A. Mutchler M. J. Parker J. Wm. Rivkin A. S. Russell C. T. Stern S. A.
[The 3D Figure and Surface of Pallas from HST](#) [#2421]
 We present Pallas in three dimensions and surface maps.
- 9:15 a.m. Besse S. * Groussin O. Jorda L. Lamy P. Kaasalainen M. Gesquiere G. Remy E. OSIRIS Team
[3-Dimensional Reconstruction of Asteroid 2867 Steins](#) [#1545]
 The OSIRIS imaging experiment has imaged asteroid Steins. We have combined three methods to retrieve the shape: limbs, Point of Interest and light curves. The mean radius of Steins is 2.7 ± 0.3 km, for a volume of 78 ± 30 km³ and a surface of 98 ± 25 km².
- 9:30 a.m. Burchell M. J. * Leliwa-Kopystynski J.
[The Large Crater on Asteroid Steins: Is it Abnormally Large?](#) [#1525]
 Comparison of the large crater on asteroid Steins (observed during the recent Rosetta fly by) to large craters on other small rocky bodies, shows that, whilst large, it is not abnormally so and follows an already established trend.
- 9:45 a.m. Heggy E. * Kataria T. Clifford S. M. Lasue J. Kofman W.
[Dielectric Model of Comet 67P/Churyumov-Gerasimenko in Support of the CONSERT Radar Tomography Experiment On Board Rosetta](#) [#1944]
 We present parametric dielectric model of Comet 67P/Churyumov-Gerasimenko and corresponding radar wave propagation through the comet in Support of the CONSERT Radar Tomography Experiment on Board Rosetta.
- 10:00 a.m. Sánchez P. * Scheeres D. J.
[Granular Mechanics in Asteroid Regolith: Simulating and Scaling the Brazil Nut Effects](#) [#2228]
 The simulation and scaling of granular mechanics flows in asteroid regolith is studied to interpret observations of asteroid surfaces and topography. We focus on the “Brazil Nut Effect” in gravitational fields of different magnitudes.
- 10:15 a.m. Asphaug E. *
[Shattered Dirt: Surface Fracture of Granular Asteroids](#) [#1438]
 The fracture grooves prevalent on Eros, Phobos and other small bodies cannot be indicators of a competent rocky bedrock. They are expressions of soil cohesion exceeding the minuscule gravitational overburden in the upper meters.

- 10:30 a.m. Richardson J. E. *
[*The Seismic Effect of Impacts on Asteroid Surface Morphology: Three-Dimensional Modeling Results*](#) [#2144]
We investigate impact-induced seismic effects on cratered asteroid terrain, utilizing a two-stage modeling process: a numerical shake-table to compute regolith motion, which is then applied to a three-dimensional model of cratered terrain evolution.
- 10:45 a.m. Durda D. D. *
[*Constraining Source Crater Regions for Boulder Tracks and Elongated Secondary Craters on Eros*](#) [#2173]
Dynamical models of reaccretion of impact ejecta on asteroids are used to 'back track' the derived landing trajectories of selected boulders on Eros, placing constraints on the source regions for the primary impact craters.
- 11:00 a.m. Buczkowski D. L. * Barnouin-Jha O. S. Wyrick D. Prockter L. M.
[*Further Analyses of the 433Eros Global Lineament Map*](#) [#1187]
While some linear features identified on Eros are clearly formed by impact, others do not obviously follow any model predictions of lineation formation by impact and possibly represent a pre-existing internal structure. New analyses are presented.
- 11:15 a.m. Scheeres D. J. * Jacobson S. A.
[*Fission and Stability of Ellipsoidal Contact Binary Asteroids*](#) [#2040]
The initial relative equilibrium state for contact binary asteroids spun to fission are always unstable. Thus their initial evolutionary phase should be strongly unstable and the application of classical tidal results may not be correct.
- 11:30 a.m. Holsapple K. A. *
[*The Deformation of Asteroids from YORP Spin-Up*](#) [#2053]
YORP spin-up is a candidate for forming binary asteroids. Results of an analytical study of the deformation of a spinning ellipsoidal body with imposed increasing angular momentum are presented, and compared to a numerical N-body study.